IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

    Andrew Fraser

Application No.: 10/803,520

Filed: March 17, 2004

For: RECOGNITION OF PATTERNS IN DATA

Confirmation No. 5488

Examiner: Hung Q. Pham

Technology Center/Art Unit: 2159

APPELLANTS' BRIEF UNDER
37 CFR §41.37

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

    Further to the Notice of Appeal mailed on February 16, 2010 for the above-referenced application, Appellants submit this Brief on Appeal.

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1. REAL PARTY IN INTEREST

The real party in interest is Synature Limited.

2. RELATED APPEALS AND INTERFERENCES

No other appeals or interferences are known which will directly affect, are directly affected by, or have a bearing on the Board decision in this appeal.

3. STATUS OF CLAIMS

All of the pending claims 1, 6, 10-21, 27 and 28 stand rejected and are the subject of this appeal.

Claims 2-5, 7-9, and 22-26 have been canceled.

No claims have been withdrawn.

No claims stand allowed.

4. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the non-final rejection of November 17, 2009.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Applicants' claimed invention relates to the recognition of patterns in data. One aim of the invention is to provide a data management system that can obtain information from a large database relating to past activities and make predictions as to future events from that data, for example to match customers to items or potential interest, to predict customers' purchasing behavior, or to provide other customer relations functions. (Abstract, Specification p. 1 line 6 – p. 2 line 24).

The claimed system uses survey techniques based on Personal Construct Theory (PCT). In performing a survey, the system presents a user with a series of "construct pairs". A construct pair may be a pair of words that could be used to describe an item, and may be opposites. (Specification p. 5 line 18 – p. 6 line 20). For each construct pair, a series of possible

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scores is also presented, and the user is asked to choose a score for a product being evaluated. For example, the user may be asked to rate a computer system on a scale of 1 to 5, where 1 means "well made" and 5 means "unreliable". (p. 18 line 26 – p. 19 line 12, Tables 6 and 7). It is important to recognize that the survey technique uses construct pairs of <u>descriptive terms</u> describing extremes of <u>opinion</u> about an item, for example "well made" vs. "unreliable", or "heavy" vs. "easy to read". The words in the construct pairs may even be referred to as "poles". (p. 18 line 3 – p. 19 line 6, Table 6). The system does not simply ask for an open-ended numerical satisfaction rating.

In a first "bootstrap" stage, a large number of individuals (several hundred) are surveyed about a product, using several construct pairs selected from a "construct repository". (p. 8 lines 20-23, p. 18 lines 3-12). These responses are analyzed to group the individuals into classes. (p. 9 lines 3-6).

Once groupings are determined, a new user can be surveyed and compared to the predetermined groupings, to identify a set to which the user belongs. (p. 37 lines 11-12).

The system can then make recommendations for products to the new user, based on how the products are perceived by others in the grouping to which the user belongs. (p. 11 lines 2-8, p. 23 lines 6-7).

The application includes one independent claim, claim 1.

<u>Claim 1</u>

Claim 1 recites a data management system for identifying patterns in data related to an item for which a recommendation may be provided from the system to a user. (p. 2 lines 15-17, Figure 8). The system comprises a host computer system (p. 5 lines 3-12, Figure 8 element 16). The host computer has a construct repository configured to retain a plurality of construct pair reference sets, each construct pair reference set comprising at least a first descriptive term and a second descriptive term, the first descriptive term and the second descriptive term selected according to personal construct theory to represent contrasting opinions. (p. 2 lines 21-24, p. 22 lines 7-10, p. 5 line 18 – p. 6 line 28, p. 3 lines 10-15, p. 18 line 3 – p. 19 line 2). A graphical user interface is configured to display a user-selectable control related to a construct pair reference set of the plurality of construct pair reference sets and further

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configured to receive a particular user's opinion selected between the first descriptive term and the second descriptive term, the graphical user interface further configured to store in the construct repository the opinion received from the particular user for the construct pair reference set. (p. 3 lines 10-21). An analysis engine is configured to analyze relationships among a plurality of received user opinions for construct pair reference sets retrieved from the construct repository in which the analysis engine analyses responses made by the particular user using a statistically based process to identify a set of users to which the particular user belongs and to generate a recommendation for the particular user related to an item based on the degree to which the particular user is proximal in profile to others in the set. (p. 3 lines 1-5, p. 11 lines 10-13, p. 22 line 11 – p. 23 line 14, p. 37 lines 11-12, p. 26 lines 20-16-22).

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 6, 10-21, 27 and 28 are anticipated under 35 U.S.C. § 102(b) by Jacobi et al., U.S. Patent 6,064,980 ("Jacobi").

Claim 21 has also been rejected under 35 U.S.C. § 112, second paragraph as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Only the rejection under 35 U.S.C. § 102 is the subject of this appeal. Applicants will cooperate with the Examiner to address the rejection under 35 U.S.C. § 112 upon conclusion of this appeal.

7. ARGUMENT

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Jacobi describes a "recommendation service ... which uses collaborative filtering techniques", for example to recommend books to a reader based on ratings made by other similar readers. (Jacobi Abstract). Jacobi fails to disclose, expressly or inherently, several elements of Applicants' claim 1. Accordingly, Jacobi does not anticipate claim 1.

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For example, claim 1 recites in part

> *a **construct repository** configured to retain a plurality of **construct pair reference** sets, each construct pair reference set comprising at least **a first descriptive term and a second descriptive term**, the first descriptive term and the second descriptive term **selected according to personal construct theory to represent contrasting opinions**;*
>
> *a graphical user interface configured to display a **user-selectable control** related to a construct pair reference set of the plurality of construct pair reference sets and further configured to receive a particular user's opinion selected **between the first descriptive term and the second descriptive term**, the graphical user interface further configured to store in the construct repository the opinion received from the particular user for the construct pair reference set...*

Claim 1 thus requires a repository of *construct pair reference sets*. Each *construct pair reference set* includes two *descriptive terms* representing *contrasting opinions* of a thing. Examples of *construct pair reference sets* include "well made" vs. "unreliable" or "heavy" vs. "easy to read". (Specification p. 18 lines 3-12).

Jacobi does not describe this kind of *repository*, and does not describe *construct pair reference sets*.

In support of the rejection, the Office Action points to Figures 3 and 4 of Jacobi and their descriptions in Jacobi's columns 6 and 7. (Office Action p. 2). However, these portions of Jacobi do not support the rejection.

Jacobi's Figure 3 shows a user interface screen by which a new user of the system indicates how often the user reads books in several listed categories. Jacobi's Figure 4 is a user interface screen by which a user rates particular books, identified by title, on an essentially numerical scale. The Office Action attempts to equate a book category or a book title with Applicants *first descriptive term*, and a category frequency or a user's book rating with Applicants' *second descriptive term*. (Office Action p. 4). This forced reading of Jacobi ignores elements of Applicants' claim, which specifies that the two descriptive terms are *selected according to personal construct theory to represent contrasting opinions*. A book's category or title is not a descriptive term that expresses an opinion, and thus cannot represent a contrasting opinion. The frequency with which a user reads books in a certain category is also not an

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opinion. The user's rating of a particular book is not a descriptive term and is not contrasted with anything.

Jacobi does not disclose *construct pair reference sets*. Furthermore, Jacobi makes no reference to *personal construct theory* for selecting any descriptive terms. Thus, Jacobi does not disclose the *construct repository* of claim 1.

Jacobi also does not disclose the *graphical user interface* of claim 1, which is *configured to display a user-selectable control related to a construct pair reference set of the plurality of construct pair reference sets and further configured to receive a particular user's opinion selected **between the first descriptive term and the second descriptive term**.* In support of the rejection, the Office Action points again to Jacobi's Figure 4. (Office Action p. 4). However, using the user interface of Jacobi's Figure 4, a user simply selects a rating of a particular book from a list of possible ratings using drop-down selections. There is no selection ***between*** two *descriptive term[s]*.

Applicants' Table 6, reproduced below, illustrates the kind of selection described in claim 1.

TABLE 6

Basic 1 x 10 Grid											
Elements											
	A	B	C	D	E	F	H	I	J	K	
Construct Pole X	R_1	R_2	R_3	R_4	R_5	R_6	R_7	R_8	R_9	R_{10}	Construct Pole Y

Applicants' Table 6 shows a construct pair, including construct pole X and construct pole Y, and selectable elements between the poles. As is explained above, the poles are *descriptive terms* that are *selected according to personal construct theory to represent **contrasting opinions***. Nowhere does Jacobi provide a user interface *to receive a particular user's opinion selected **between the first descriptive term and the second descriptive term***.

Jacobi does not disclose, expressly or inherently, each and every element of Applicants' claim 1, and therefore does not anticipate claim 1. The remaining claims depend

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from claim 1 and add further limitations, and are therefore also not anticipated for at least this reason.

Furthermore, at least some of the dependent claims include elements not disclosed by Jacobi, and are not anticipated for additional reasons.

Merely by way of non-limiting example, claim 6 recites that *the graphical user interface is configured to receive the user's opinion about the aspect of the item in a number of discrete selectable steps within a range between the first descriptive term and the second descriptive term, that number of steps being referred to as a "mesh."* In support of the rejection, the Office Action points to Figures 3-5 of Jacobi as allegedly disclosing these elements. (Office Action pp. 4-5). However, the cited figures do not support the rejection. Figure 3 of Jacobi illustrates a user interface by which a reader can indicate how often he or she reads books in various categories, and does not receive a user's opinion about anything. Similarly, Figure 5 shows a list of recommended books that may be presented to a user, but does not receive a user's opinion in any way. Jacobi's Figure 4 illustrates an interface for receiving simple ratings of books, but does not use descriptive terms or receive an opinion *in a number of discrete selectable steps within a range between the first descriptive term and the second descriptive term.* Also, Jacobi nowhere refers to a "mesh".

In another example, claim 10 recites that *the user can input a value representative of their opinion by adjustment of a position of a control provided by the graphical user interface.* In support of the rejection, the Office Action points again to Figures 3 and 4 of Jacobi. (Office Action p. 5). However, both of those figures illustrate pull-down menus, and not a control with a position adjustable by a user.

In yet another example, claim 16 recites that *the construct pair reference set is obtained through use of a repertory grid in accordance with personal construct theory.* Nowhere does Jacobi refer to a construct pair reference set, a repertory grid, or personal construct theory. In support of the rejection, the Office Action points again to Figures 3 and 4 of Jacobi. (Office Action p. 6). These figures are described above, and neither of them remotely relates to the elements of claim 16.

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In another example, claim 17 recites that *incomplete data is processed by matching those parts of the data that are present with characteristics of existing data.* In support of the rejection, the Office Action cites column 7 lines 30-33, column 5 lines 1-12, and column 1 lines 25-40 of Jacobi as allegedly disclosing this claim element. (Office Action p. 6). None of the cited passages does so. The cited passage from column 1 merely gives a broad description of "collaborative filtering". The cited passage from column 5 is also a generic description of gathering a database users' opinions and the use of "the information stored within this database to generate recommendations." The passage from column 7 indicates that once a user has rated a minimum number of titles, the user is presented with the option to view the service's recommendations. This passage merely indicates that a user must provide a threshold level of information in order to receive recommendations from Jacobi's system, and does not describe how incomplete data is processed.

In still another example, claim 18 recites that *incomplete data is subject to discriminant analysis.* In support of the rejection, the Office Action cites column 7 lines 30-33 of Jacobi as allegedly disclosing this element. (Office Action p. 6). The only complete sentence appearing at column 7 line 33 of Jacobi states that "[o]nce the minimum number of titles have been rated (excluding "don't know" ratings), the user is presented with the option (not shown) of viewing the service's recommendations." (Jacobi col. 7 lines 30-33). Clearly this passage does not describe *discriminant analysis.* Neither does any other part of Jacobi.

In further examples, claims 19 and 20 recite respectively that *data is subject to a process of linearisation prior to its being analysed,* and that *the process of linearisation includes conversion of non-numeric data to a numeric form.* In support of the rejections, the Office Actions cites only Figures 1-4 of Jacobi as allegedly disclosing these elements. (Office Action p. 6). As is apparent from inspection of the figures, nothing in them makes any indication of linearisation of data. Neither does any other part of Jacobi discuss linearisation.

In yet another example, claim 21 recites that *the output [of the data management system] includes predictive information as to the future purchasing behaviour of the customers.* In support of the rejection, the Office Action cites column 4 lines 13-23 and Figure 5 of Jacobi as allegedly disclosing this element. (Office Action p. 7). However, neither of these parts of Jacobi

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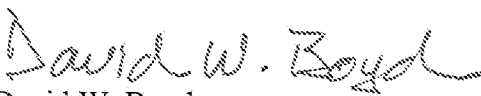Attorney Docket No. 040225-000000US

supports the rejection. Figure 5 illustrates a list of recommendations that might be presented to a user of Jacobi's system. While these may represent predictions of what the customer may like, Jacobi's system does not provide predictions about users' buying behavior. The passage from column 4 provides no additional relevant detail. As is explained in Applicants' specification, predicting future buying behavior involves more than just making a recommendation, but predicting such things as whether customers will actually buy the recommended products, how much customers may spend, and whether customers may switch to other suppliers. (Specification p. 10 lines 14-20, p. 25 lines 22-27, p. 30 lines 1-7). No part of Jacobi describes making predictions of customers' *future purchasing behaviour*.

Jacobi fails to disclose, either expressly or inherently, many elements of Applicants' independent claim and dependent claims, and therefore does not anticipate any of the claims.

8. CONCLUSION

For these reasons, it is respectfully submitted that the rejection should be reversed.

Respectfully submitted,

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9. CLAIMS APPENDIX

1.   A data management system for identifying patterns in data related to an item for which a recommendation may be provided from the system to a user, the system comprising a host computer system having:

a construct repository configured to retain a plurality of construct pair reference sets, each construct pair reference set comprising at least a first descriptive term and a second descriptive term, the first descriptive term and the second descriptive term selected according to personal construct theory to represent contrasting opinions;

a graphical user interface configured to display a user-selectable control related to a construct pair reference set of the plurality of construct pair reference sets and further configured to receive a particular user' s opinion selected between the first descriptive term and the second descriptive term, the graphical user interface further configured to store in the construct repository the opinion received from the particular user for the construct pair reference set; and

an analysis engine configured to analyze relationships among a plurality of received user opinions for construct pair reference sets retrieved from the construct repository in which the analysis engine analyses responses made by the particular user using a statistically based process to identify a set of users to which the particular user belongs and to generate a recommendation for the particular user related to an item based on the degree to which the particular user is proximal in profile to others in the set.

2-5.   (Canceled)

6.   A data management system according to claim 1 in which the graphical user interface is configured to receive the user's opinion about the aspect of the item in a number of discrete selectable steps within a range between the first descriptive term and the second descriptive term, that number of steps being referred to as a "mesh."

7-9.   (Canceled)

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10.   A data management system according to claim 1 in which the user can input a value representative of their opinion by adjustment of a position of a control provided by the graphical user interface.

11.   A data management system according to claim 1 in which the results of the analysis are further used to deduce a set of information items of interest to a particular user.

12.   A data management system according to claim 1 in which the system executes on a server that communicates with a user over a network link.

13.   A data management system according to claim 1 that includes a user data input component that executes on a remote host system.

14.   A data management system according to claim 13 in which the data input component is represented in the display generated by a web browser.

15.   A data management system according to claim 13 in which the data input component is generated by an applet that is downloaded to the remote host from the server.

16.   A data management system according to claim 1 in which the construct pair reference set is obtained through use of a repertory grid in accordance with personal construct theory.

17.   A data management system according to claim 1 in which incomplete data is processed by matching those parts of the data that are present with characteristics of existing data.

18.   A data management system according to claim 17 in which the incomplete data is subject to discriminant analysis.

19.   A data management system according to claim 1 in which data is subject to a process of linearisation prior to its being analysed.

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20.   A data management system according to claim 19 in which the process of linearisation includes conversion of non-numeric data to a numeric form.

21.   A data management system according to claim 1 in which users are the customers of a business and wherein the output includes predictive information as to the future purchasing behaviour of the customers.

22-26. (Canceled)

27.   The data management system of Claim 1 in which the item is selected from one of a person, a product, a service, a topic, a concept, an event, and an experience.

28.   The data management system of Claim 1 wherein the user-selectable control is configured to have a discrete number of settings for receiving the user's opinion about the aspect of the item.

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10. EVIDENCE APPENDIX

None.

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11. RELATED PROCEEDINGS APPENDIX

None.